

By this Amendment, Claims 4, 5, 8, 9, and 16 have been cancelled, and Claims 1, 2, 3, 6, 7, 10, 14, 15, 17, and 19 have been amended. Thus, Claims 1-3, 6-7, 10-15, and 17-20 are pending in the application. The claims, as amended, are fully supported by the instant specification. Accordingly, no new matter has been added.

Claim Rejections

35 U.S.C. § 102(a) Rejection Overcome

The Examiner rejected Claims 1-17 and 19 under 35 U.S.C. § 102(a) as being anticipated by Johnson because Johnson allegedly teaches a method for identifying the function of a test compound that discloses a method comprising (i) providing a plurality of cells, the plurality comprising at least two different cell types and exposing the plurality of cells with a test compound; (ii) measuring expression of one or more genes in the said cell types and comparing the expression of said genes with a reference cell and an alteration in said gene expression indicates the function of said test compound. In light of the present amendment, the Applicants respectfully traverse this rejection.

Applicants have amended claims 1 and 19 to specify that the cell types of the present invention comprised of at least three mammalian cell types selected from osteosarcoma, astrocytoma, erythroleukemia, hepatoma, monocytic, endothelial, fibroblast, T-cell, monocyte, B-cell, NK-cell, normal human osteoblast, astrocyte, hepatocyte and normal human lung fibroblast cell types.

The Applicants respectfully assert that, in view of the present amendment, the Examiner cannot establish a *prima facie* case that the Applicants' invention is anticipated by Johnson. As stated by the Federal Circuit, "[a]nticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim."

Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)).

Since Johnson does not disclose use of at least three mammalian cell types selected from the specifically recited list of osteosarcoma, astrocytoma, erythroleukemia, hepatoma, monocytic, endothelial, fibroblast, T-cell, monocyte, B-cell, NK-cell, normal human osteoblast,

astrocyte, hepatocyte and normal human lung fibroblast cell types, Johnson does not disclose each and every element of the claimed invention.

35 U.S.C. § 103(b) Rejection Overcome

The Examiner rejected Claims 18 and 20 as being unpatentable over Johnson in view of MacLeod. As described above, Johnson does not teach the present invention. Johnson does not teach use of at least three mammalian cell types selected from the recited list of osteosarcoma, astrocytoma, erythroleukemia, hepatoma, monocytic, endothelial, fibroblast, T-cell, monocyte, B-cell, NK-cell, normal human osteoblast, astrocyte, hepatocyte and normal human lung fibroblast cell types. There is nothing in Johnson that would suggest using the specific cell types recited in the present amended claims.

MacLeod discloses a method for combinatorial gene expression to identify differentially expressed genes where real time polymerase chain reaction could be used to measure the gene expression, but does not disclose use of at least three of the mammalian cell types specifically claimed for use in evaluating test compounds using gene expression. Thus, MacLeod does not remedy the deficiencies of Johnson, and thus combining Johnson with MacLeod does not make the present invention obvious to one ordinarily skilled in the art.

Moreover, in order to establish obviousness, there must be some teaching, suggestion or incentive in the prior art to produce the claimed invention. See In re Napier, 55 F.3d 610, 613, 34 U.S.P.Q.2d 1782, 1784 (Fed. Cir. 1994). "The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." In re Laskowski, 871 F.2d 115, 117, 10 U.S.P.Q.2d 1397, 1399 (Fed. Cir. 1989).

Furthermore, the motivation for modifying the prior art must have come from the prior art, and not from Applicants' specification. See In re Dow Chem. Co., 837 F.2d 469, 473, 5 U.S.P.Q.2d 1529, 1531-32 (Fed. Cir. 1988). The prior art cited by Examiner does not provide motivation to modify the methods described by Johnson alone or in combination with MacLeod. to arrive at the present claimed invention.

CONCLUSION

On the basis of the foregoing, Applicants respectfully submit that Examiner's rejections have been traversed and the pending claims are in condition for allowance. If there are any questions regarding these amendments and remarks, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

Respectfully submitted,



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In the Claims:

1. (Amended) A method of identifying the function of a test compound, the method comprising:

providing [a plurality of cells]at least three mammalian cell types, [the plurality comprising at least a first cell and a second cell, wherein the second cell is a different cell type from the first cell type]wherein the cell types comprise osteosarcoma, astrocytoma, erythroleukemia, hepatoma, monocytic, endothelial, fibroblast, T-cell, monocyte, B-cell, NK-cell, normal human osteoblast, astrocyte, hepatocyte and normal human lung fibroblast cell types;

contacting each of the [cells]cell types [in the plurality]with a test compound; and
measuring expression of one or more genes in [said]each [first]cell type;and
measuring expression of one or more genes in said second cell;]

wherein an alteration in the expression of said one or more genes in each cell type in the presence of the test compound relative to the expression of said one or more genes in [a reference]each cell type in the absence of the test compound indicates the function of said test compound.

2. (Amended) The method of claim 1, wherein expression of at least two genes is measured in [said first]each cell type.

3. (Amended) The method of claim [2] 1, wherein expression of at least five genes is measured in [said first]each cell type.

6. (Amended) The method of claim [5]1, wherein said method further comprises measuring the expression of one or more genes in a fourth cell type[, wherein the fourth cell is a different cell type from the first cell, the second cell, and the third cell].

7. (Amended) The method of claim 1 or 6, wherein said method further comprises measuring the expression of three or more genes in [at least one of said second cell type, third cell type, or fourth] each cell type.

10. (Amended) The method of claim 1, wherein said [cells] cell types are provided in a container.

14. (Amended) The method of claim 1, wherein said method comprises contacting [at least some cells] the cell types [in said plurality] with two or more test compounds.

15. (Amended) The method of claim 1, wherein said [plurality of cells] cell types comprise[s] human [mammalian] cells.

17. (Amended) The method of claim 1, wherein said [first] three cell types [is] are selected from the group consisting of MG-63 cells, U87-MG cells, TF-1 cells, HepG2 cells, THP-1 cells, HUVEC cells, CCD-1070SK cells, and Jurkat E6-1 cells.

19. (Amended) A method of identifying the function of a polypeptide test compound, the method comprising:

providing [a plurality of cells] at least three mammalian cell types, [the plurality comprising at least a first mammalian cell, a second mammalian cell, and a third mammalian cell, wherein the first cell is a different cell type from the second cell type, the second cell type is a different cell type from the third cell type, and the third cell type is a different cell type from the first cell type] wherein the cell types comprise osteosarcoma, astrocytoma, erythroleukemia, hepatoma, monocytic, endothelial, fibroblast, T-cell, monocyte, B-cell, NK-cell, normal human osteoblast, astrocyte, hepatocyte and normal human lung fibroblast cell types;

contacting each of the [cells] cell types [in the plurality] with said polypeptide; and measuring expression of three more genes in [said first] each cell type [;], [measuring expression of three or more genes in said second cell type; and measuring expression of three or more genes in said third cell type;]

wherein an alteration in the expression of said genes in each cell type in the presence of the polypeptide relative to the expression of said genes in [a reference] each cell type in the absence of the test compound indicates the function of said test compound.

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